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Recovering the Performative Role of Innovations in the Global Travel of Healthcare Practices

Is there a Ghost in the Machine?

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CHAPTER SUMMARY

This chapter discusses the global travel of practices with reference to the international patient safety movement, focusing on a specific approach to incident investigation (Root Cause Analysis or RCA for short). We assess how knowledge of the technique was mobilized, from the United States to Australia, the United Kingdom and beyond. We argue that the mobilization and world spanning circulation of this set of practices was sustained and facilitated by the construction of an "anxiety-reassurance" package. This package worked to support the mobilization of the approach through, first, raising public and professional anxiety about pre-existing management practices around patient safety, and second, creating reassurance by proposing a new management solution to solve this problem. Playing together these two seemingly opposite discourses, the innovation generated a wave of interest and urgency that it then rode and that allowed rapid globalization. Below we show how this powerful "package" actively translated the new approach in the sense of both circulating and profoundly reconfiguring it. We suggest that a focus on the innovation as a well-oiled piece of discursive machinery helps us "unpack the black box," and understand the active role of innovations in fueling their own translation. This without reverting to the old idea that innovations are "diffused."

8.1 Introduction

For the most part of the twentieth century, academics and policy makers alike endorsed the view that modes of organizing, practices, and ideas diffuse within a population or field through a more or less mindless process of contagion, usually described using the chemical image of diffusion (Rogers, 1995; Strang and Soule, 1998; Van de Ven and Hargrave, 2004). The idea of innovation and policy diffusion is based on a rational communication model and draws on the implicit principle that the knowledge is transmitted unchanged; the success of the innovation depends on the fit between the nature of the sender, the object that is translated, and the receivers. Adopters are often depicted as passive; the focus is on responsive adaptive behavior; the engine behind the diffusion of innovations is assumed to be either the acquisition of a competitive advantage or normative compliance (Johnson and Hagström, 2005).

From the 1990s this under-socialized, scarcely performative view of the circulation and take-up of new knowledge, practices and modes of organizing was problematized by a number of studies which confronted diffusion theory to posit the existence of a "ghost in the machine"[1] and brought to attention the active role of adopters in the process of innovation (Latour, 1986; Czarniawska and Joerges, 1996; Czarniawska and Sevón, 1996; Strang and Soule, 1998; Johnson and Hagström, 2005; Frenkel, 2005; Czarniawska and Sevón, 2005a; Boxenbaum and Battilana, 2005; Morris and Lancaster, 2006; Sahlin and Wedlin, 2008; Ansari, Fiss, and Zajac, 2010; Nicolini, 2010). Contrary to the prevailing diffusionist view, the Sociology of Translation suggested that the circulation[2] and take-up of innovations is better understood as a social and political process through which new ways of working actively "carve out" a space within the existing texture of practices. This is achieved by a process that allows them to become associated with a variety of different interests and goals. The more interests and goals a new practice or innovation can serve and mobilize, the more irresistible it will become. The model derives from a strong semiotic, material, and political orientation to social affairs and is based on three main claims (Latour, 1986).

Firstly, practices, policies, and modes of organizing do not actually travel and always require some type of intermediary to move in space and time. Such intermediation is usually discursive and symbolic in character. In short, it is not practices or ways of doing which travel but rather their descriptions or representations. Practice, policies, and institution are thus turned into texts, ideas, models, images, drawings, narratives, examples, and so on, which are circulated far away from the point of origin. Practices, policies, and ways of working can also be inscribed in human bodies and minds, in the form of skills and competences. In this case humans become themselves

intermediaries. Finally, in certain circumstances material objects like prototypes, software, and other artifacts can also be used to convey the idea of a practice, policy, or particular new ways of working. From a research point of view the key empirical question is not only how a practice moves in space and time but how one particular new way of doing becomes relevant and compelling given that we are continuously surrounded by endless new ideas and possibilities.

Secondly, and strictly related to the former, the movement in space and time of any new knowledge, practice, or mode of organizing, is in the hands of those involved. They may accept it, modify it, deflect it, betray it, add to it, appropriate it, or let it drop (Latour, 1986: 267). The impetus must thus come from the potential users themselves who must perceive some benefits from the adoption of this new way of working. Each of these actors shapes the innovation to their own ends. Instead of a process of transfer and transmission, we have thus a process of continuous transformation (Latour, 1986).

Thirdly, because there are always several possible competing interpretations of any new way of doing things, each serving a particular type of interest, the translation process should always be regarded as a political task that takes place within specific institutional constraints and power dynamics. Organizational fields are thus the locus of tactics, strategic action, and conflict (Waring and Currie, 2009). Translating innovation is always tied to the local pursuit of specific material or immaterial interests. The receivers and (potential) adopters of innovations are thus not only active, they are politically savvy.

From the perspective of the Sociology of Translation, focusing on the characteristics of the innovation and its presumed innovativeness makes little sense and the process of translation, rather than the properties of innovative ways of organizing and practices, needs to be the focus of "diffusion" studies (Czarniawska and Joerges, 1996: 25). Innovations travel fueled mostly by the need (or desire) of actors to imitate others while pursuing their own specific interests (Czarniawska and Joerges, 1996; Czarniawska and Sevón, 2005b). Accordingly, studies in this tradition have traditionally focused on the micro-tactics and broader processes whereby interests are organized, movements created and innovations propelled (see Boxenbaum and Pedersen, 2009 for a review). However, while the previous studies documented the journey of innovative ideas and how they are made to change in the process (Ansari, Fiss, and Zajac, 2010) innovations were seen mostly as rather inert intermediaries that human individual or collective agents passed to each other. The performative power of the innovation itself was downplayed or ignored, being perceived as belonging to the alternative (i.e. diffusion) paradigm.

In this chapter we argue that by doing so the Sociology of Translation missed a chance to add a few more mediators in the world (Latour's battlecry is "more mediators and less intermediaries" see Latour, 2005: 37 and ff.) The difference between intermediation and mediation is subtle but important. Intermediaries are mediums, neutral carriers (Latour, 1994: 31). They have limited or no influence on the nature of the message or what has been exchanged. Mediation, on the other hand, implies displacement, drift, invention, and "the creation of a link that did not exist before and that to some degree modifies two elements or agents" (Latour, 1994: 31). This often requires that the message or the thing that is exchanged is modified to become more acceptable to both parties. At the end of a process of mediation both parties will end up in places that were different from where they started. Mediators are thus by definition active and consequential both on the exchange and what is exchanged.

We argue that in specific circumstances the innovation itself should be included in the explanation of its success—the innovation is a mediator in its own right. This is not because of its supposed inherent innovativeness (as in the traditional diffusion approach) but more simply because certain innovations, especially complex process innovations, are engineered to perform a specific type of (discursive) work that contributes to translation, diffusion and success. In the case of Root Cause Analysis (RCA)—a set of practices, tools and skills to investigate the origin of serious clinical incidents, the innovation itself operated as a capable, heterogeneous assemblage of human and non-human elements that actively contributed to create the context for its adoption. The package of discursive resources, tools and people (Nicolini, Waring, and Mengis, 2011) worked together to support the spread of the approach, first, by raising public and professional anxiety about the performance of pre-existing practices around patient safety, and second, by creating reassurance through proposing a new management solution to solve the crisis it had artfully created. By playing together these two seemingly opposite discourses, the innovation package generated a wave of interest and urgency that it then rode and that allowed its fast global circulation. For once, the ghost is in the machine.

This chapter is organized as follows. After briefly summarizing our research methods and context, we describe the journey whereby RCA was translated from one discipline to another and then proceeded to jump from continent to continent until it became a global phenomenon. We then zoom in on the nature of RCA and unpack its strategies and the language employed when invoking its use that explain its performative capability. We conclude by framing our findings within the broader discussion on the translation, transition, and transmission of knowledge across time and space.

8.2 Context and Methods

Our research style is based on analytic narratives (Bates et al., 2000) and process tracing (George and Bennett, 2005). Theory-guided process-tracing approaches generate explanatory models based on a limited number of historical cases.

We conducted twenty-six semi-structured interviews and a comprehensive documentary analysis in the USA, Australia, and the UK. We chart here the travel of the idea and practice of RCA (Czarniawska and Sevón, 1996; Czarniawska and Sevón, 2005a; Nicolini, 2010), examining how it was adopted as the dominant approach to learn from incidents and improve safety in the UK, Australia, and elsewhere.

Interviews were tape recorded and transcribed. Two of the authors then proceeded to create a time-ordered matrix and a number of process-event charts, working inductively to identify clear recurring patterns in the data (Levi, 2002).

8.2.1 *What is RCA?*

Root Cause Analysis refers to a family of structured methodologies for the retrospective and structured investigation of adverse incidents, near misses and sentinel events. It is aimed at helping organizations learn from their mistakes (Wald and Shojania, 2001). RCA is based on the belief that in order to prevent accidents from recurring an interdisciplinary team has to inquire not only how the event happened, but what are its underlying systemic causes to formulate corrective actions (Carroll, Rudolph, and Hatakenaka, 2002). RCA promises that organizational problems and the solutions to these problems can be identified through robust, rigorous, and rational analytical processes (Andersen and Fagerhaug, 2000).

As a process, RCA fits within a wider model of organizational learning that involves stages for knowledge sharing through incident reporting, stratification of incidents to determine their relative priority, structured investigation to determine the underlying causes and producing recommendations and service improvements to promote future safety (Nicolini, Waring, and Mengis, 2011). RCA is based on a rational choice approach to problem solving (March, 1994) and a linear view of organizational change (see, for example, Weick and Quinn, 1999). The ideal RCA process is summarized in Table 8.1.

While variations of this model exist (Bagian et al., 2002; Woloshynowych et al., 2005), there remains an enduring commitment to following a linear analytical framework (Runciman and Walton, 2007). The broad consensus is

Table 8.1. An ideal model of the RCA process (from Amo, 1998)

The seven steps for Root Cause Analysis
1. Identify the incident to be analyzed
2. Organize a team to carry out the RCA
3. Study the work processes
4. Collect the facts
5. Search for causes
6. Take action
7. Evaluate the actions taken.

Table 8.2. Root Cause Analysis in practice

What is the focus of RCA investigations?
The following is an example of a root cause analysis conducted within a Victorian (Australian) public hospital. A suicidal patient admitted to inpatient care concealed medication previously prescribed and attempted suicide via overdose. The patient survived this attempt, but subsequently succeeded in hanging themselves within the inpatient unit. The subsequent RCA investigation recommended changes in the search procedures of patients' belongings when admitted to care, revision of the guidelines for care of suicidal patients and implementing an improved anti-ligature system for bathroom doors/fittings. (State Government Victoria, Department of Health, 2014)
How does RCA work in practice?
At one of the hospital we observed in the UK the "RCA" described a facilitated group session held in one of the departments in order to further investigate and discuss an untoward accident with serious consequences for a patient. Participation was strongly encouraged but not mandatory. Usually about a dozen people attended. Statements were collected ahead of the meeting and a timeline carefully constructed. The facilitator used the incident timeline to trigger and structure a conversation in search of immediate and root causes. Other tools were utilized to give depth to the discussion, for example a fishbone analysis of contributory factors. At the end of the session the facilitators usually identified some of the "good practices" that emerged during the discussion as well as some of the lesson learned and areas that required change. A report summarizing the discussion and action point was then sent to the hospital management for approval.

that RCA represents an umbrella or toolbox of approaches rather than a single method (Andersen and Fagerhaug, 2000: 12).

Woloshynowych et al. (2005) report that more than forty RCA techniques are available, including brainstorming, cause-effect charts, change analysis, "five whys" diagrams, fault trees, and Gantt charts, providing different levels and forms of analysis at different stages of the investigation. Two examples of RCA are provided in Table 8.2.

8.3 Findings: The Global Travel of RCA

8.3.1 *The Origins: Jumping Industry Boundaries*

The modern version of RCA has its roots in the nuclear branch of the US Navy where the approach was developed as a tool to guarantee high standards of performance and reliability. After the Three Mile Island incident (1979), and

subsequent enquiry, RCA was widely adopted by civilian and military nuclear industry establishments (Carroll, 1998; Wears, Perry, and Sutcliffe, 2005). Seminal publications on RCA were written by nuclear industry experts. During the 1980s and 1990s, safety professionals—usually engineers—extended the method into other industries. By the mid-1990s RCA was a cemented part of the general body of knowledge for safety professionals.

8.3.2 *RCA Conquers the US Healthcare Sector*

In the USA, the use of a structured method to investigate incidents was introduced in healthcare in the mid-1990s through the jointed and sometime disjointed efforts of two large agencies—the Joint Commission for Accreditation of Hospitals ("the Joint Commission") and the Veterans Health Affairs Administration (VHA) (Wears, Perry, and Sutcliffe, 2005).

The Joint Commission is an independent, not-for-profit organization formed by the merger of the largest medical associations in North America. Its primary purpose is to evaluate and provide voluntary accreditation to healthcare organizations. The VHA provides medical services for US armed forces veterans and their families. It is government funded and is the largest integrated healthcare system in the USA, serving 8.3 million customers per annum.

Both organizations became sensitized to the issue of patient safety following the Harvard Medical Practice Study (Brennan et al., 1991). The study examined 30,121 randomly selected records from fifty-one randomly selected hospitals and found that adverse events occurred in 3.7 percent of the cases (1,114 patients). In 13.6 percent of cases this lead to death (151 cases). Almost one quarter of these incidents were due to negligence.

Following the publication of the report the Joint Commission introduced an "agenda for change," including a system of voluntary reporting of critical incidents. Informants described this as highly ineffective. Under increased media attention and the report of a string of horror stories coming out of accredited hospitals, in 1995 the Joint Commission considered a punitive response, withdrawing accreditation from "error" hospitals. According to one of our informants, this policy was abandoned in favor of a more developmental approach promoted by Rick Croteau, a former NASA doctor proficient in using engineering techniques to investigate accidents and prevent their reoccurrence. Croteau, as director of the Joint Commission strategic initiative on preventing clinical errors, promoted a policy requiring all hospitals to investigate and report the causes of the most serious adverse events ("sentinel events") so that the Joint Commission could conduct cross hospital analysis and make recommendations for change. The Joint Commission developed a detailed definition of sentinel events and promoted the use of "Focus Reviews," a team based exercise modeled on Quality Circles (one of our

informants described this as "RCA under a different name"). Conducting the Focus Reviews was voluntary (the Joint Commission did not have enforcing power), member organizations were motivated to adopt the practice as accreditation status would not be changed if a review was conducted. The Joint Commission however could only recommend but not prescribe how such reviews were to be conducted.

Concurrently, the VHA was following a similar path and in the early 1990s established a Patient Safety Event Registry. The process required that local experts would conduct an investigation using ten structured questions. In typical bureaucratic fashion, the report would then be sent to regional and possibly national offices. According to our informants quality was poor and the question usually attracting most attention was whether the incident could have adverse public relations effects.

Evolution hastened in the mid-1990s, when the VHA employed Jim Bagian, an ex-astronaut and safety expert at NASA. He was brought in to guide the newly established Patient Safety Improvement initiative, later to become the VHA National Centre for Patient Safety. Bagian's initial actions included establishing an Expert Panel on Patient Safety System Design with a mix of VHA employees and experts from aviation, safety engineering and psychology. The panel proposed a set of recommendations to guide the VHA attempt to improve their safety record. They examined the reporting systems used in aviation and aeronautics and in 1997 produced a series of recommendations aimed at establishing a mandatory, non-punitive system of investigation and reporting focused on learning rather than apportioning blame. At the core of the approach was RCA, understood as a structured, team based method of incident investigation that would feed the improvement process. The approach was formalized in the 1998 "VHA Patient Safety Improvement Handbook," now in its third iteration. At the same time, the two organizations (and others not mentioned here for brevity's sake but which constituted an emerging community of interest), started to meet and exchange notes. In 1996 and 1998 the two organizations gathered several hundred experts at the Annenberg Conferences where the Joint Commission shared the lessons learned through the sentinel event program while the VHA discussed their approach to learning from errors.

Matters took a further dramatic turn in 1999 with the publication of the Institute of Medicine report "To err is human." The report replicated on a wider scale the Harvard Medical Practice Study and came to the striking conclusion that about 98,000 people die each year in US hospitals as a result of preventable medical errors. As one of our informants put it:

> . . . the report changed the opinion of a lot of people . . . From then on people could not say that medical malpractice was not a serious problem . . . this served to put the issue of patient safety, which previously had been invisible, on the radar screen.

Patient safety had been turned into a social problem (Kitsuse and Spector, 1973). One outcome of the report was the joint development of a Safety Assessment Code (SAC) Matrix for close calls and adverse events, bringing together the classifications used by the VHA and the Joint Commission.

Following the publication of the report, the VHA also sped up the roll out of RCA as the main approach to learn from incidents. How RCA was to be conducted in all VHA facilities, the tools to be used, when and by whom, were codified in a new version of the Handbook issued in 2000. This included diagrams, instructions on how to conduct the investigation, who was to be involved, how remedial actions were to be formulated. The initiative was a resounding success:

> We started out with less than 10% of our facilities volunteering to try this, less than 10%. In less than a month from that 10% starting to do it, the gossip mill, if you will—the conversations they would have with their colleagues . . . every other facility was demanding to do it immediately, and that's not an exaggeration . . . I had calls or emails from every director saying, "How come we are not doing this already? When do we get to start doing this?" which is a good problem to have. (Interviewee)

Concurrently, Bagian visited the Joint Commission, presented the VHA approach and showed their materials. Soon after, Dennis O'Leary, head of the Joint Commission, publicly confirmed that new Joint Commission policy was to be based on VHA's handbook for Patient Safety.

The march of RCA now was irresistible. In 2002 stakeholders across the public and private sector establish the National Quality Forum and created the first list of "never events" (very serious incidents that should never happen), and monitored their occurrence. In 2005 the Department of Health and Human Services started a national network of Patient Safety Organizations that collected and analyzed voluntary reports of adverse events. In both cases, RCA was identified as the main tool to investigate incidents, produce change, and address "the underlying system of care deficiencies" (Andersen and Fagerhaug, 2000).

Members of the two organizations differ on who should be credited for the success of the RCA. Members of the Joint Commission suggested that the VHA version of the RCA was just a modification of what they had been doing for almost two decades. The VHA claims that they should be credited for the introduction of engineering rigor and discipline:

> [At the Joint Commission] nobody knew how to do investigations. They would sit down together and look at it and say, "well, yeah, the nurse should try harder," or "I do not know, that's just a normal complication; patients died, but that just happens." So 50% of the time they get to the end saying "that just happened" while the other 50% was "try harder" or give them some training. (Interviewee)

VHA staff are happy to acknowledge that the Joint Commission had a critical role in the mainstreaming of RCA "We were acting as providers, and they were really the government oversight although we also had CMS,[3] which is another government [agency] . . . There's no end of government oversight, but they were the biggest of the oversight groups." If the Joint Commission speaks, the US hospitals listen.

8.3.3 *RCA Crosses the Atlantic and Takes Root in the UK*

As in the USA, institutionalized attention on patient safety in the UK started to emerge in the 1990s, the dawn of what Power (2007) describes as the age of the risk management of everything. Risk management has become a benchmark of good governance for banks, hospitals and many other organizations. Since the mid-1970s National Health Service (NHS) organizations were required to apply the Health and Safety at Work Act, 1974, subsequently safety in healthcare was forcefully brought to the fore by a series of reports from the National Audit Office in the early 1990s. In a report from 1995, for example, the National Audit Office found that "hospitals are . . . dangerous places for patients, staff and visitors" and that "the large number of accidents imposes a very significant burden on NHS resources which could be better spent on patient care" (National Audit Office, 1996).

Monitoring the occurrence of incidents was central to this approach. In 1991, the Department of Health (DoH) issued to all the local healthcare authorities a suite of occupational health and safety tools (SAFECODE) including IRIS, the first standardized method to report incidents implemented in the UK. The tool allowed monitoring the frequency of adverse events and provided the basis both for a number of government reports and the establishment of the still existing Clinical Negligence Scheme for Trusts, a mandatory internal insurance system. Premiums are calculated on the number of past occurrences, with significant discounts for organizations who can demonstrate that they proactively try to prevent incidents. IRIS, however, was used sporadically. As the 1995 National Audit Office report put it "we consider it unsatisfactory that, despite the NHS Executive's previous guidance, many hospitals do not have accident recording systems which provide accurate and timely information."

While the NHS was pursuing a traditional risk management approach, culminating in 1999 with the adoption of the Australian Risk Management Standard as the official NHS policy, others were following a different path. In 1995 academics and clinicians established a research unit on patient safety at University College London. The group, led by Charles Vincent, tried to adapt to the needs of healthcare settings the principles of the so called "human factor" approach to incidents (Reason, 1995). "Human factors" utilizes systemic and

psychological principles to identify the communicational, cultural and contextual reasons for the occurrence of adverse events. As a founding member put it, one of the main concerns of the group was "how we could investigate incidents more systematically and produce change." While the government was mainly interested in auditing the number of incidents, internal investigations at the time were mainly used to apportion blame: "they had morbidity and mortality meetings that junior doctors and the midwives used to hate going to because they knew they were going to be hung, drawn and quartered" (Interviewee).

The group produced the CRU/ALARM protocol, a structured method for investigating clinical incidents using a combination of record review, staff interviews and a human factors checklist highlighting psychological and organizational factors (Vincent, Taylor-Adams, and Stanhope, 1998). According to an interviewee, while the protocol drew from a variety of sources, they intentionally refrained from using the name RCA. This was because RCA was perceived as a set of tools and approaches "that you apply when you are doing a systematic incident investigation" rather than a protocol that can guide the investigation. RCA was "just a label," and possibly a confusing one. As our informant stated "I think the people that were talking about Root Cause Analysis at that time were probably not people who were experts in investigation techniques." The label was as intriguing as it was vague.

As in the USA, matters in the UK took a dramatic turn in the early 2000s following yet another scandal. An inquiry conducted at Bristol Royal Infirmary in the late 1990s identified catastrophic systemic failures compounded with a culture of secrecy and collusion that had led to the preventable death of at least thirty children over five years. The resulting wave of indignation led to an investigation into the NHS capacity to learn from incidents. The results were damning. The authors of the report "An Organization with a Memory" (DoH, 2000) candidly admitted that the NHS consistently failed to learn from its errors. The experts recommended establishing a unified mechanism for reporting incidents and for ensuring that where lessons were identified, the necessary changes were put into practice. They also recommended that the NHS promote a wider appreciation of the system approach in preventing and learning from errors as well as a more open culture in which errors and service failures could be reported and discussed.

One year later, the Department of Heath published a plan to address these issues and implement the recommendations. The 2001 report "Building a Safer NHS for Patients—Implementing an Organization with a Memory" instituted explicit links between safety and clinical governance (de facto putting managers and not clinicians in charge of patient safety); also establishing an arm's length agency in charge of promoting patient safety (the National Patient Safety Agency—NPSA) and set up a national repository for

reported incidents (National Reporting and Learning System) modeled on the existing Australian AIMS (see section 8.3.4). Finally, the report identified RCA as "the more in-depth approach to identifying causal or systems factors in more serious adverse events or near misses" (DoH, 2001: 37). Other homegrown systems and protocols such as SAFECODE and the CRU/ALARM protocols were ignored or subsumed under the RCA label.

Of particular interest here is that the report explicitly documents the international travel of RCA:

> There are many approaches to root cause analysis used in healthcare and in other industries. The Department of Health is participating in an Australian initiative to review a range of approaches from different countries and produce guidance on alternative methodologies that are directly relevant to healthcare. We will pilot the results of this work during 2001 and issue guidance on root cause analysis. (DoH, 2001: 38)

The "Key features of a thorough root cause analysis" discussed at page 37 of the document are taken from a Joint Commission document, itself derived from the VA handbook. The international links that contributed to the success of RCA were confirmed by other sources. Speaking at a conference after the first year of operations of the new National Patient Safety Agency, a director of the Department of Health policy unit explained that:

> Our preparations for this work began late last year by consulting experts in patient safety both in the UK and abroad. Leading patient safety proponents like Bill Runciman . . . and Jim Bagian . . . We have collaborated closely with: ECRI, the Australian Patient Safety Foundation (APSF), the Centre for Patient Safety in Chicago, the Hong Kong Hospital Authority, the US Veterans Health Administration, and with other bodies and individuals. (Knox, 2002: 230)

The conference served as the launch pad for the report "Doing less Harm" (DoH, 2001). This established the policies and practices that were to be followed by the largest public healthcare organization in the world, the NHS. The document sanctioned the discursive equivalence between investigations and RCA and translated previous approaches under the new label. Conference organizer Stuart Emslie, inventor of SAFECODE, consultant to the Hong Kong government and the NHS, explicitly reframed the ALARM protocol in RCA terms, equating the two.

Not everyone was convinced by the wholesale adoption of the RCA vocabulary, however. Two of the most prominent figures of the UCL group recall that RCA (which they call a "misnomer") became a "buzzword" at NPSA:

> I can remember Jenny Dinner (a pseudonym), because when she was initially in the post at the NPSA she gave me a call and said "do you know anything about this root cause analysis stuff?"

The informant recalls the moment when the label became institutionalized, not so much in one of the many documents that, as we have seen above, the NHS produces at a very fast rate, but in the discursive practices of the patient safety community of practice:

> Now how those "organization with a memory" people had come up with the terminology of root cause analysis I don't know . . . but when the first cohort of Patient Safety Managers were trained [on how to conduct investigations] the terms was institutionalized and cannot be recalled . . . the blind leading the blind.

8.3.4 *The Burning Deck: RCA Travels Down Under (and then Takes over the World)*

Within Australia the provision of public health services is primarily the concern of each of the separate eight states and territories. The story of the penetration of RCA in Australia is therefore more complex than in the two former cases. Here we recount what happened in three states: South Australia, New South Wales, and Queensland, as the story of RCA in Australia is intimately linked with—and in many ways similar to—the experience in the USA and UK.

South Australia was an early administration where attention to clinical incidents resulted in a co-ordinated attempt to record and monitor adverse events. In the mid-1980s a group of anaesthesiologists established a voluntary, anonymous reporting system (Advanced Incident Management System) which helps to collect and analyze detailed information about healthcare incidents using a classification based on most common adverse events. The AIMS-Anaesthesia database gained national attention after a serious incident with a vaporizer; clinicians identifying an array of problems with the equipment, leading to new, clearer guidelines that became a national and later international standard (Runciman, 2002; Øvretveit, 2005).

Quickly the AIMS system was expanded as a Federal initiative, to include all other specialties, providing a large, centralized repository of information on adverse events countrywide. With this data, and explicitly modelled on the 1991 Harvard Study, clinicians found that 16.3–16.5 percent of patients admitted to Australian hospitals experienced some sort of adverse event, capturing both political and popular attention (Wilson et al., 1995). A follow-up study found that about 50 percent of adverse events were preventable (Wilson et al., 1999). While the studies were later disputed for overestimating the extent of the problem they pushed patient safety to the attention of the healthcare community. Critically, the study made clear that reporting adverse events and doing something about them were two different matters.

As in the UK, the adoption of methods to actively learn from incidents—rather than only learning about them, commonly followed what one of our informants called "burning decks," that is to say crises. In interview, the generation of anxiety through the analogy of responding to the burning deck of a ship was notable.

In New South Wales that "burning deck" came with a series of accidents in a regional health authority, where whistle-blowing nurses identified adverse events in healthcare in local hospitals in the period leading up to a state election. In the ensuing public debate, state political leaders sought to allocate blame for what had been systemic public health system failures. Key health bureaucrats saw the need for a process that focused on the problem-solving aspect of RCA, rather than the allocation of blame.

Notably, one senior interviewee expressed a view that there was a pattern of the New South Wales health bureaucracy adopting US-based innovations "holus bolus" without consideration of its local appropriateness. For example, the Quality and Safety Branch of New South Wales Health initiated the adoption of RCA and a raft of other health quality techniques on the basis that the same approach had been adopted by the US VHA. In particular, Dr Jim Bagian of the VHA was considered as highly influential in the introduction of RCA, across Australia. According to our interviewees, Bagian's effectiveness springs from both his capacity to form effective relationships with key individuals, and his very persuasive use of stories. Through these stories Bagian conveys the deep cultural and behavioral patterns that underlie many medical accidents. The generally poor standards of handwashing by health professionals are a ready instance of such cultural and behavioral patterns.

In Queensland, the crisis came in 2005 when a Dr Patel at Bundaberg Public Hospital was accused of presiding over a series of poor surgical outcomes, including deaths. The event sped up the development of a State Patient Safety Centre (established in 2004) and fast-tracked both the development of RCA in Queensland and a more general patient safety management system. Drawing on lessons learned during a fellowship with the VHA in the US, Dr Wakefield, the local RCA champion, pushed forward the establishment of a comprehensive system for improving patient safety, through learning from near misses and adverse events. Rather than the blame-free emphasis of New South Wales, the recurrent theme within Queensland is upon a "just" process, linking back to the original work of Jim Bagian and reflecting a preference for procedural fairness and consistency and efforts to ensure transparency.

While, as noted above healthcare in Australia is primarily driven at the state level, the invoking of RCA has been nationally driven. Today a central body, the Australian Commission on Safety and Quality in Health Care, drives patient safety measures at the national level.

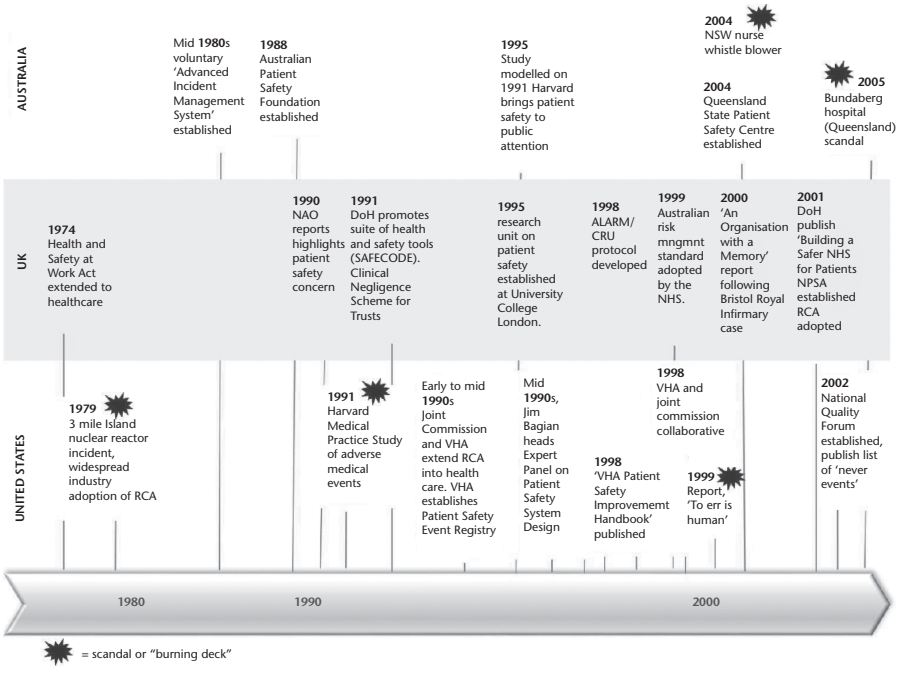

Figure 8.1 Chronology of the development of RCA in the USA, UK, and Australia

Following the adoption of RCA in Australia, the method was embraced by the World Health Organization. In 2004, the WHO launched The World Alliance for Patient Safety, putting RCA at the heart of its global campaign to promote patient safety. Training booklets on how to conduct RCA have been translated in eight languages and are fully available on the WHO website. The training material is based on the methods developed by the VHA and the UK National Patient Safety Agency (closed in 2011 as part of cost-cutting measures). RCA is now a global phenomenon. A précis of the development of RCA across the US, UK, and Australia is given Figures 8.1 and 8.2.

8.4 Analysis: An Ordinary Story of Translation—with a Twist

The story of RCA is in many ways an interesting yet quite "ordinary" case of the circulation of new ideas at global scale. It has all the ingredients of a translation rather than a diffusion story. First, RCA traveled carried by a variety of human and non-human intermediaries. In order to do so, it had to be abstracted from its original context, packaged in the form of documents, accounts, and the stories of people such as Dr Bagian. It then had to be

Figure 8.2 The travel of RCA

unpacked in the different localities where it was translated. Our account here is partly unique in that we could clearly trace which intermediary moved the idea from place to place and when. Second, the process was clearly of a social nature and in all cases we could clearly identify a number of (good) reasons why the potential users could benefit in adopting RCA and the personal, political, and societal benefits that would ensue from this. Finally, there is ample evidence that the idea of RCA changed as it traveled (Ansari, Fiss, and Zajac, 2010). As we have seen, RCA traveled by being translated over and over, so that at any point in time RCA was the provisional outcome of more or less a long series of prior translations, each critical for the idea to be adopted by a new audience—and therefore its travel. In the process, the RCA label "absorbed" a variety of pre-existing methods and protocols as it traveled from the NASA Space Center to the Geneva office of the WHO via the hospitals of the VHA and the NHS.

These findings accord with previous studies on the social nature of the circulation of innovation. The journey of RCA is similar to many of the translation stories recounted in Czarniawska and Sevón (2005a). In the case of RCA, we found that the circulation of the new practice was particularly facilitated by three concurrent circumstances: its theorization, interpretive flexibility, and its being sustained by a broad social network. First, authors have found that when a new idea is theorized and turned by academics and consultants into abstract models such as in Table 8.1, its capacity to travel around the world is enhanced (Greenwood, Hinings, and Suddaby, 2002). Second, ambiguity and interpretive flexibility are also well-known facilitators of circulation. Interpretive flexibility refers to the capacity for the innovation to be adapted locally so that it can appeal to a variety of users (Scarbrough and Swan, 2001). In our case, for example, because of its indeterminacy ("there are many approaches to Root Cause Analysis used in healthcare and in other

industries") RCA can become the easy fix to many woes and the solution to many problems: accreditation, litigation, learning from medical adverse events. Finally, the specific dynamics in the social network that may form around an innovation also concur to determine its success (Scarbrough and Swan, 2001). In our case, for example, the travel of RCA seems inextricably linked to the emergence of a global network of people (and artifacts) that together can be held responsible for its global circulation.

Clearly, at some point RCA also acquired the status of fashion (Abrahamson and Rosenkopf, 1997; Hargadon, 2003). As we have shown above, both our UK and Australian informants made it clear that at some point RCA had become a "force majeure," with organizations adopting it as a matter of course. This happened despite strong voices against the mainstreaming of this engineering approach to healthcare. For example, in 2004, a pioneer of the CRU/ALARM protocol, the UK approach at first sidelined and then "digested" by RCA, wrote in the *British Medical Journal* that "...the term 'root cause analysis', while widespread, is misleading in a number of respects" (Vincent, 2004: 242). However, as his colleague noted, by then the term (and its focus on presumed root causes that according to Vincent rarely exist) had been institutionalized and could not be recalled in spite of its possible and well-known shortcomings. In our research, interviewees reported that in some instances of analysis, very minor case factors were exaggerated in an attempt to satisfy the presumed need to identify a root cause when in practice the adverse event had arisen from a combination of minor factors.

If one were to listen to some of our informants, most of the merit of the success of RCA should be attributed to the human actors involved. Indeed, during our interviews several of them described themselves in terms that resonate with Maguire, Hardy, and Lawrence's (2004) definition of institutional entrepreneurship ("activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones" (Maguire, Hardy, and Lawrence, 2004: 657)). While interviewees tried to convince us that RCA prevailed because it was superior to the other methods (a sign that they had assimilated the traditional narrative of diffusion theory), several of them seemed to be fully aware of the political and opportunistic nature of some of the events that lead to the global success of RCA. Yet the merit was all on the human side.

But is this conceivable? Was RCA really one innovation like all others? Was its success down to just something being available to fill the gap? There was nothing intrinsically new or superior about RCA that could explain its success, if nothing else because RCA had still to be tested in practice (and be found lacking: see Nicolini, Waring, and Mengis, 2011 for an in-depth discussion). Could there be other characteristics that can explain why RCA was the best bet and why the entrepreneurs went for it instead of some of the alternatives?

What happens if we open the black box of RCA and we treat it as an (active) source of performativity rather than simply an intermediary that allowed humans to align and pursue their interest?

8.4.1 *Opening the Black Box: RCA as an Anxiety-Reassurance (Discursive) Package*

We argue that part of the success of RCA can be explained by some of its particular characteristics, chiefly the way in which RCA is presented. RCA constitutes more than a simple toolkit to investigate incidents. In all countries we examined RCA; it was introduced as a complex discursive package built around the conflict between anxiety and reassurance. This package concomitantly highlighted and amplified the uncertainty and dangers of the medical practice and offered a reassuring solution in the form of techniques that promise some form of control of uncertainty and produce safer healthcare services. We suggest that such characteristics enhanced the capacity of RCA to recruit practitioners (rather than vice versa). In short, at some point RCA started to operate as a powerful and well-oiled recruitment machine.

We can start by noting that in all three of our cases the arrival of RCA follows what our informants described as "burning decks," a reference derived from the heroic poem "Casabianca" by Hemans. In the USA, UK, and Australia, RCA was introduced in the aftermath of some scandal or large incident, partly as a way to allay public concern. The use of scandals, inflammatory rhetoric, and scaremongering to promote policy and even product innovation is well documented (Kitsuse and Spector, 1973). Shankar and Subish (2007) for example, suggest that one of the favorite ways in which pharmaceutical companies promote their products is by "creating awareness" about illness. The resulting anxiety is then used to sell the appropriate treatment (or policy). While we do *not* suggest that RCA was artificially introduced using the same technique (called disease mongering), we argue the same basic discursive principle was operating nonetheless. Almost all the documents were constructed using the same semiotic strategy. Here is how the Under-Secretary of State Lord Hunt introduced RCA in 2001:

> Today our focus is on patient safety and with good reasons. Research carried in this country and independently in Australia and America suggests that 1 in 10 patients admitted to hospitals suffers an adverse event . . . at least half of these are thought to be preventable. That's 1 in 20 patients . . . and the research further suggests that 8% of these 1 in 20% will die as a consequence . . . So Learning from Experience is the answer. And to unlock the learning from experience we are looking for the real reasons—the root causes that lie behind these events. (Hunt, 2002: 3–5)

One can note the artful juxtaposition of anxiety and reassurance in the same sentence—a typical move á la Greimas that turns RCA into an actant—the hero of the story.

Once anxiety has been mobilized, RCA can then propose itself as a solution. It does so by virtue of its historic and discursive lineage. On the one hand RCA can claim to be derived from the world of engineering, where of course people are presumed to know what they are doing. If NASA used it, then it must work (let's forget about the two lost Shuttles, of course). At the same time Root Cause Analysis carries with it the reassuring idea of the possibility to get to the root of the problem, once and for all. The combination of legacy and discourse turns RCA into a suturing narrative package. Suturing narratives retell the unfolding of a crisis in terms of beginning, ending, and points in between thus restoring "a general sense of predictability" (Fine and White, 2002: 54). The redemptive nature of the narrative makes the package both seductive and convincing. It establishes direct discursive links with the modern fantasy of control over uncertainty and as such it can enroll and exploit the wider existential anxiety typical of reflexive modernity (Beck, Giddens, and Lash, 1994). In so doing, RCA latches upon what Power (2007) described as the attempt at risk managing everything. From this point on RCA starts to align and "collaborate" with other practices that are part of the same movement. Current instances are the introduction of systems of clinical governance in hospitals, and quality assurance of practitioners. Like a snowball, RCA becomes bigger and irresistible by capturing interests and actors. Unlike a snowball, part of the reason lies in the nature of its variable geometry.

Other characteristics of RCA facilitate its capacity to make proselytes. RCA is modular and therefore easy to be applied selectively, it is malleable. Experts like Vincent complain about the pick-and-choose attitude toward this approach yet this makes it particularly palatable. RCA is also easy to teach—unlike approaches that require understanding of complex theory, such as the human error approach.

In sum, RCA as a package actively captures allies and interests by virtue of its discursive and methodological nature. It operates as an active source of agential power, although such performative capability is different from the one we usually attribute to humans as no intentionality is involved. The right image here would be that of a virus which attaches itself to vulnerable cells (cells without the appropriate receptors are not susceptible to viruses). RCA is a viral innovation capable of attaching itself to a sufficiently large number of actors, thanks to its discursive nature and narrative working. It carries and is carried around by some of the most powerful narratives of modern times: rationality, science, technology, and the USA. An irresistible package indeed.

8.5 Discussion and Conclusion

In this chapter we examined the global travel of an innovation—RCA. We found that the success RCA can be partly explained with reference to its content, that is, its being specifically framed as an "anxiety-reassurance" package (Fujimura, 1992). In all the countries we examined what traveled was not only a structured methodology for investigating incidents (RCA), but a more complex discursive package. This package concomitantly highlighted and amplified the uncertainty and dangers of medical practice and offered a reassuring solution, a set of techniques and practices promising control of uncertainty and producing safer healthcare services. RCA fed on the broader discourse of the "risk society," amplified by the work of a number of moral entrepreneurs that reiterated the dangers of the healthcare service. The very anxiety created by the discourse around RCA found its resolution in the methodology itself: RCA reassures that if correctly implemented, hospitals will learn from clinical incidents and healthcare services will become safer. RCA mobilizes the discourse of engineering and its "modernist" focus on controllability through rational deliberation and technique.

RCA constitutes thus a "standardized theory-method package" (Fujimura, 1992). The idea of a standardized package combines some of the intuitions behind the notion of "boundary objects"(Star and Griesemer, 1989) with the idea of "translation" (Latour, 2005). It suggests that the process through which "an innovation becomes the ruler over a realm" includes a number of typical steps such as: the labeling of the innovation, the establishment of the innovation as an obligatory point of passage, the emergence of the innovation as a distributed center of authority, the establishment of mutual interest within the network, the search for and the enrolment of new allies, the standardization of the innovation, the closure of the translation and the institutionalization of the relative performative composite entity (called the actor-network because of its capacity to make things happen).

We suggest, however, that particular attention needs to be paid to the rhetoric and discursive nature of the package itself. Unlike boundary objects, RCA is not an empty (or semi-empty) signifier or something that can be used as a projective surface by different groups with only partially overlapping interests. On the contrary, RCA is a very "full signifier" which operates as a rhetorical mechanism, capturing interests and practitioners thanks to its capacity to actively mobilize local interests and connect these to wider circuits of accountability (in our case, the global shift toward the risk management of everything).

The story of RCA suggests that much is to be gained if we find ways of opening the black box of some modern innovations and study whether there is indeed a "ghost in the machine." Albeit we are unlikely to find such a ghost,

we will end up gaining a much better understanding of the inner persuasive and rhetoric workings of innovations. By addressing the circulation in terms of "active packages" we contribute to rectifying an imbalance in the current theorization of the travel of ideas in terms of "translation." The translation approach traditionally rejects the idea that innovations are propelled by their perceived novelty and superior performance, and travel thanks to their inherent innovativeness, as in the diffusion paradigm (Rogers, 1995). On the contrary, the spread of ideas is driven by actors' imitation of others as they pursue their own interests (Czarniawska and Joerges, 1996; Czarniawska and Sevón, 2005b). While this approach has the historic merit of providing an alternative to the diffusion approach, it has tended to see innovations (or rather a textualized version of them) as intermediaries that actants pass to each other. Although the theory postulates that the central ideas change as they travel, the focus is firmly on the users and their interest rather than the innovation itself.

We suggest that this focus on actors and their interests prevents us from asking whether innovation plays an active role in making itself relevant and compelling for all those touched by it. While for commodities the answer is likely to be "no," our case suggests that matters may be different for more complex innovations and other artifacts that are packaged as "rhetoric" and "persuasive machines." A focus on innovations as active packages of theory/discourse and methods/practice allows us to recover the performative role of innovations without reverting to the notion that innovations are diffused thanks to their innovative essence. We argue that in so doing we address an imbalance in translation theory and respond to Latour's exhortation that sociology should populate the world with more active mediators and less inactive intermediaries (Latour, 2005).

Acknowledgments

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Notes

1. The "myth of the ghost in the machine" is an expression used by philosopher Gilbert Ryle (1949) to ridicule Descartes' view that volitional acts of the body must be caused by volitional acts of the mind, that is, that mind and body are separate entities and that the functioning of the former has control over the latter. The

traditional diffusion approach to the circulation of innovations (Rogers, 1995) makes more or less the same mistake in that the perceived "innovativeness" of the new products or practice is supposed to cause its diffusion and take-up. Our tenet here is that the process translation theory at times goes too far, so that consequential features of the innovation end up being overlooked.

2. We intentionally use the neutral terms "circulation" and "travel" as the ideas of transfer, transmission and diffusion are already heavily theory-laden.
3. The Centers for Medicare and Medicaid Services, which in 2008 also officially adopted RCA as a mandatory approach to apply with serious clinical incidents.